

April 26, 2016

Meagan E. Ormand
Golder Associates Inc.
2108 W. Laburnum Ave.
Suite 200
Richmond, VA 23227

RE: Project: Bremo Power Station - CSWTS
Pace Project No.: 92295109

Dear Meagan Ormand:

Enclosed are the analytical results for sample(s) received by the laboratory on April 25, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

All samples were digested for 245.1 analyses. No digestion was performed for 200.8 analyses.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
Project Manager

Enclosures

cc: Ron DiFrancesco, Golder Associates Inc.
Mike Williams, Golder Associates Inc



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92295109001	T4-160422-1727-S1 DUP	Water	04/22/16 17:27	04/25/16 14:55
92295109002	T4-160422-1925-S1 DUP	Water	04/22/16 19:25	04/25/16 14:55
92295109003	T4-160422-2325-S1 DUP	Water	04/22/16 23:25	04/25/16 14:55
92295109004	T4-160423-0235-S1 DUP	Water	04/23/16 02:35	04/25/16 14:55
92295109005	T4-160423-0421-S1 DUP	Water	04/23/16 04:21	04/25/16 14:55
92295109006	T3-160423-1934-INF DUP	Water	04/23/16 19:34	04/25/16 14:55
92295109007	T3-160423-2134-INF DUP	Water	04/23/16 21:34	04/25/16 14:55
92295109008	T3-160423-2132-S1 DUP	Water	04/23/16 21:32	04/25/16 14:55
92295109009	T3-160424-0955-S1 DUP	Water	04/24/16 09:55	04/25/16 14:55
92295109010	T3-160424-0958-INF DUP	Water	04/24/16 09:58	04/25/16 14:55

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SAMPLE ANALYTE COUNT

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92295109001	T4-160422-1727-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109002	T4-160422-1925-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109003	T4-160422-2325-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109004	T4-160423-0235-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109005	T4-160423-0421-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109006	T3-160423-1934-INF DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109007	T3-160423-2134-INF DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109008	T3-160423-2132-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109009	T3-160424-0955-S1 DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A
92295109010	T3-160424-0958-INF DUP	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	HVK	1	PASI-A

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PROJECT NARRATIVE

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Method: EPA 200.8

Description: 200.8 MET ICPMS

Client: Golder_Dominion_Bremo

Date: April 26, 2016

General Information:

10 samples were analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Method: EPA 245.1

Description: 245.1 Mercury

Client: Golder_Dominion_Bremo

Date: April 26, 2016

General Information:

10 samples were analyzed for EPA 245.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T4-160422-1727-S1 DUP Lab ID: 92295109001 Collected: 04/22/16 17:27 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	4.9	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7440-36-0	
Arsenic	3.0	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:15	7440-43-9	
Chromium	0.82J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7440-47-3	
Copper	1.4	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7439-92-1	
Nickel	0.88J	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:15	7440-02-0	
Selenium	1.4	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:15	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:15	7440-28-0	
Zinc	ND	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:15	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 14:55	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T4-160422-1925-S1 DUP Lab ID: 92295109002 Collected: 04/22/16 19:25 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.2	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7440-36-0	
Arsenic	2.7	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:28	7440-43-9	
Chromium	0.73J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7440-47-3	
Copper	1.0	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7439-92-1	
Nickel	0.78J	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:28	7440-02-0	
Selenium	1.6	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7782-49-2	
Silver	0.069J	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:28	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:28	7440-28-0	
Zinc	2.9J	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:28	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 14:58	7439-97-6	

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T4-160422-2325-S1 DUP Lab ID: 92295109003 Collected: 04/22/16 23:25 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.1	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7440-36-0	
Arsenic	2.7	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:30	7440-43-9	
Chromium	0.73J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7440-47-3	
Copper	1.1	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7439-92-1	
Nickel	0.80J	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:30	7440-02-0	
Selenium	1.5	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:30	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:30	7440-28-0	
Zinc	4.0J	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:30	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:00	7439-97-6	

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T4-160423-0235-S1 DUP Lab ID: 92295109004 Collected: 04/23/16 02:35 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	4.8	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7440-36-0	
Arsenic	2.1	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:33	7440-43-9	
Chromium	0.71J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7440-47-3	
Copper	0.53J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7439-92-1	
Nickel	0.92J	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:33	7440-02-0	
Selenium	1.4	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:33	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:33	7440-28-0	
Zinc	ND	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:33	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:02	7439-97-6	

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T4-160423-0421-S1 DUP Lab ID: 92295109005 Collected: 04/23/16 04:21 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	6.9	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7440-36-0	
Arsenic	4.8	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:35	7440-43-9	
Chromium	0.71J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7440-47-3	
Copper	0.74J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7439-92-1	
Nickel	1.1	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:35	7440-02-0	
Selenium	1.5	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:35	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:35	7440-28-0	
Zinc	ND	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:35	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:10	7439-97-6	

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T3-160423-1934-INF DUP Lab ID: 92295109006 Collected: 04/23/16 19:34 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.4	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7440-36-0	
Arsenic	4.2	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7440-38-2	
Cadmium	0.056J	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:38	7440-43-9	
Chromium	0.56J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7440-47-3	
Copper	9.0	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7440-50-8	
Lead	16.2	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7439-92-1	
Nickel	1.9	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:38	7440-02-0	
Selenium	1.8	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:38	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:38	7440-28-0	
Zinc	51.9	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:38	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:12	7439-97-6	

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T3-160423-2134-INF DUP **Lab ID: 92295109007** Collected: 04/23/16 21:34 Received: 04/25/16 14:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.3	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7440-36-0	
Arsenic	4.0	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:40	7440-43-9	
Chromium	0.73J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7440-47-3	
Copper	0.85J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7440-50-8	
Lead	1.3	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7439-92-1	
Nickel	1.1	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:40	7440-02-0	
Selenium	1.9	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:40	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:40	7440-28-0	
Zinc	6.3	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:40	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:14	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T3-160423-2132-S1 DUP Lab ID: 92295109008 Collected: 04/23/16 21:32 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.1	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7440-36-0	
Arsenic	10.1	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:43	7440-43-9	
Chromium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7440-47-3	
Copper	0.62J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7439-92-1	
Nickel	1.0	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:43	7440-02-0	
Selenium	1.7	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:43	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:43	7440-28-0	
Zinc	13.7	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:43	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:17	7439-97-6	

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T3-160424-0955-S1 DUP Lab ID: 92295109009 Collected: 04/24/16 09:55 Received: 04/25/16 14:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.4	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7440-36-0	
Arsenic	4.1	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:45	7440-43-9	
Chromium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7440-47-3	
Copper	1.9	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7440-50-8	
Lead	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7439-92-1	
Nickel	1.1	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:45	7440-02-0	
Selenium	1.6	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:45	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:45	7440-28-0	
Zinc	ND	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:45	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:19	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Sample: T3-160424-0958-INF DUP **Lab ID:** 92295109010 **Collected:** 04/24/16 09:58 **Received:** 04/25/16 14:55 **Matrix:** Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Antimony	5.4	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7440-36-0	
Arsenic	4.0	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7440-38-2	
Cadmium	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:48	7440-43-9	
Chromium	0.54J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7440-47-3	
Copper	0.98J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7440-50-8	
Lead	0.75J	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7439-92-1	
Nickel	1.0	ug/L	1.0	0.62	1	04/26/16 13:58	04/26/16 14:48	7440-02-0	
Selenium	1.8	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7782-49-2	
Silver	ND	ug/L	0.10	0.050	1	04/26/16 13:58	04/26/16 14:48	7440-22-4	
Thallium	ND	ug/L	1.0	0.50	1	04/26/16 13:58	04/26/16 14:48	7440-28-0	
Zinc	3.8J	ug/L	5.0	2.5	1	04/26/16 13:58	04/26/16 14:48	7440-66-6	
245.1 Mercury Analytical Method: EPA 245.1 Preparation Method: EPA 245.1									
Mercury	ND	ug/L	0.10	0.070	1	04/26/16 11:50	04/26/16 15:26	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

QC Batch:	MERP/9306	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	92295109001, 92295109002, 92295109003, 92295109004, 92295109005, 92295109006, 92295109007, 92295109008, 92295109009, 92295109010		

METHOD BLANK:	1719156	Matrix:	Water
Associated Lab Samples:	92295109001, 92295109002, 92295109003, 92295109004, 92295109005, 92295109006, 92295109007, 92295109008, 92295109009, 92295109010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.070	04/26/16 14:41	

LABORATORY CONTROL SAMPLE: 1719157

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.6	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1719158 1719159

Parameter	Units	92295105001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.6	101	102	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1719160 1719161

Parameter	Units	92295109009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.5	99	100	70-130	1	20	

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QUALITY CONTROL DATA

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

QC Batch:	MPRP/30079	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
Associated Lab Samples:	92295109001, 92295109002, 92295109003, 92295109004, 92295109005, 92295109006, 92295109007, 92295109008, 92295109009, 92295109010		

METHOD BLANK: 1553547 Matrix: Water
Associated Lab Samples: 92295109001, 92295109002, 92295109003, 92295109004, 92295109005, 92295109006, 92295109007, 92295109008, 92295109009, 92295109010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.50	04/26/16 14:10	
Arsenic	ug/L	ND	1.0	0.50	04/26/16 14:10	
Cadmium	ug/L	ND	0.10	0.050	04/26/16 14:10	
Chromium	ug/L	ND	1.0	0.50	04/26/16 14:10	
Copper	ug/L	ND	1.0	0.50	04/26/16 14:10	
Lead	ug/L	ND	1.0	0.50	04/26/16 14:10	
Nickel	ug/L	ND	1.0	0.62	04/26/16 14:10	
Selenium	ug/L	ND	1.0	0.50	04/26/16 14:10	
Silver	ug/L	ND	0.10	0.050	04/26/16 14:10	
Thallium	ug/L	ND	1.0	0.50	04/26/16 14:10	
Zinc	ug/L	ND	5.0	2.5	04/26/16 14:10	

LABORATORY CONTROL SAMPLE: 1553548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	50	47.8	96	85-115	
Arsenic	ug/L	50	50.5	101	85-115	
Cadmium	ug/L	5	4.9	98	85-115	
Chromium	ug/L	50	50.8	102	85-115	
Copper	ug/L	50	51.9	104	85-115	
Lead	ug/L	50	49.0	98	85-115	
Nickel	ug/L	50	51.3	103	85-115	
Selenium	ug/L	50	52.6	105	85-115	
Silver	ug/L	5	4.8	96	85-115	
Thallium	ug/L	50	51.2	102	85-115	
Zinc	ug/L	250	261	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1553549 1553550

Parameter	Units	MS		MSD		MS	MSD	MS	MSD	% Rec Limits	Max		Qual
		92295109001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			RPD	RPD	
Antimony	ug/L	4.9	50	50	51.8	51.6	94	93	70-130		0	20	
Arsenic	ug/L	3.0	50	50	55.7	56.0	105	106	70-130		0	20	
Cadmium	ug/L	ND	5	5	4.9	5.1	97	101	70-130		4	20	
Chromium	ug/L	0.82J	50	50	51.6	51.2	101	101	70-130		1	20	
Copper	ug/L	1.4	50	50	52.3	53.2	102	104	70-130		2	20	
Lead	ug/L	ND	50	50	51.0	51.4	102	102	70-130		1	20	

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QUALITY CONTROL DATA

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1553549 1553550											
Parameter	Units	92295109001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Nickel	ug/L	0.88J	50	50	51.8	51.4	102	101	70-130	1	20
Selenium	ug/L	1.4	50	50	57.9	55.9	113	109	70-130	4	20
Silver	ug/L	ND	5	5	3.8	3.9	76	78	70-130	4	20
Thallium	ug/L	ND	50	50	53.6	54.0	107	107	70-130	1	20
Zinc	ug/L	ND	250	250	258	266	103	106	70-130	3	20

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-O Pace Analytical Services - Ormond Beach

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE


Project: Bremo Power Station - CSWTS

Pace Project No.: 92295109

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92295109001	T4-160422-1727-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109002	T4-160422-1925-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109003	T4-160422-2325-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109004	T4-160423-0235-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109005	T4-160423-0421-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109006	T3-160423-1934-INF DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109007	T3-160423-2134-INF DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109008	T3-160423-2132-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109009	T3-160424-0955-S1 DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109010	T3-160424-0958-INF DUP	EPA 200.8	MPRP/30079	EPA 200.8	ICPM/12172
92295109001	T4-160422-1727-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109002	T4-160422-1925-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109003	T4-160422-2325-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109004	T4-160423-0235-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109005	T4-160423-0421-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109006	T3-160423-1934-INF DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109007	T3-160423-2134-INF DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109008	T3-160423-2132-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109009	T3-160424-0955-S1 DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941
92295109010	T3-160424-0958-INF DUP	EPA 245.1	MERP/9306	EPA 245.1	MERC/8941

REPORT OF LABORATORY ANALYSIS

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	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: 26FEB2016 Page 1 of 2
	Document No.: F-MEC-CS-009-rev.02	Issuing Authority: Pace Mechanicsville Quality Office

Page 2 of 2 for Internal Use ONLY



Client Name:

Golder / Bremo

Project #

WO#: 92295109



Courier:

☐ Commercial

☐ Fed Ex

☐ UPS

☐ USPS

☐ Other:

☐ Client

☒ Pace

Custody Seal Present?

☐ Yes

☒ No

Seals Intact?

☐ Yes

☐ No

Packing Material:

☐ Bubble Wrap

☒ Bubble Bags

☐ None

☐ Other:

Thermometer:

☒ RMD001

☐

Type of Ice:

☒ Wet

☐ Blue

☐ None

Date/Initials Person Examining Contents: 4-26-16

RSB

Correction Factor: 0.0°C

Cooler Temp Corrected (°C):

3.2

Temp should be above freezing to 6°C

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

	Yes	No	N/A	1.	COMMENTS:
Chain of Custody Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6.	
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.	1 day TAT
Sufficient Volume?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	
Correct Containers Used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	Note if sediment is visible in the dissolved container
Sample Labels Match COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.	
-Includes Date/Time/ID/Analysis Matrix: WW					
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.	
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC,LLHg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	
Samples checked for dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Custody Seals Present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Pace Trip Blank Lot # (if purchased):					

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted:

Date/Time:

Comments/Resolution:

Project Manager SCURF Review:

MMG

Date:

4/25/16

Project Manager SRF Review:

MMG

Date:

4/26/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

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F-ALL-Q-020rev.07, 15-May-2007